



DEFENSE LOGISTICS AGENCY
LAND AND MARITIME
P.O. BOX 3990
COLUMBUS, OHIO 43218-3990

MEMORANDUM FOR MILITARY/INDUSTRY DISTRIBUTION

November 2, 2016

SUBJECT: Initial Draft(s) of: MIL-DTL-21097G, /2, /3, /4, /5, /14, /15
Project Number(s): 5935-2017-006, -007, -008, -009, -010, -011, -012

These initial draft(s) for these subject document(s), are now available for viewing and downloading from the DLA Land and Maritime-VA Web site:

<https://landandmaritimeapps.dla.mil/programs/milspec/default.aspx>

Major changes to these document(s) include:

MIL-DTL-21097G – 1. Amend NGSs - replace ASTM B488 with MIL-DTL-45204, amend EIA577 to SAE, IPC-D275 to IPC-2221, and NCSL-Z540.1 to Z540.3.

2. Amend URLs.

3. Remove EPA paragraph 6.6.

4. Replace AF 11 with AF 85.

5. Apply MIL-STD-961 updates.

MIL-DTL-DTL-21097/2/3/4/5/14/15 - Amend ASTM B488 to MIL-DTL-45204. Update Assist URL and AF 11 to AF 85.

MIL-DTL-21097/3/14/15 - Amend IPC-D275 with IPC-2221.

Concurrence or comments are required at this Center within 45 days from the date of this letter. Late comments will be held for the next coordination of the document. Comments from military departments must be identified as either "Essential" or "Suggested". Essential comments must be justified with supporting data. Military review activities should forward comments to their custodians of this office, as applicable, in sufficient time to allow for consolidating the department reply. Lack of response to this draft will be construed as concurrence. **Since Navy-EC is the custodian for this document, all Navy review activities should forward their comments directly to this Center.**

If these document(s) are of interest to you, please provide your comments or suggested changes. The point of contact for this document is Ed Wypasek, phone number 614-692-0530, facsimile transmission, 614-692-6939, e-mail edmund.wypasek@dla.mil, or may be mailed via the US Postal Service to DLA LAND AND MARITIME, ATTN: VAI (Attention: Ed Wypasek), P.O. Box 3990, Columbus, OH 43218-3990.

Sincerely,

/ *SIGNED* /

ABDONASSER M. ABDOUNI
Chief,
Interconnection Branch

Note: This draft dated 2 November 2016, prepared by DLA Land and Maritime-VAI has not been approved and is subject to modification. DO NOT USE PRIOR TO APPROVAL. (Project 5935-2017-009)

INCH-POUND

MIL-DTL-21097/4G
w/AMENDMENT 1
DRAFT
SUPERSEDING
MIL-DTL-21097/4G
23 June 2008

DETAIL SPECIFICATION SHEET

CONNECTORS, ELECTRICAL, PRINTED WIRING BOARD
COMPOSITE, RECEPTACLE, CONTACT SPACING (.200)
ALTERNATE DUAL ROW, TYPE CR

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-DTL-21097.

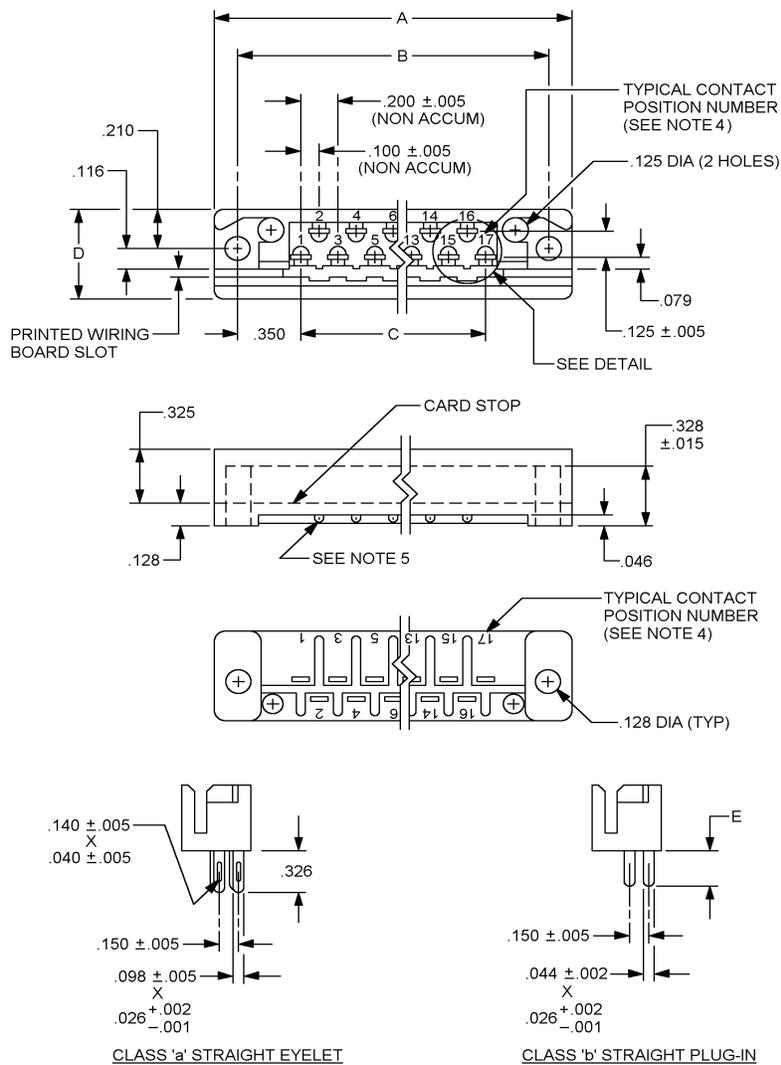
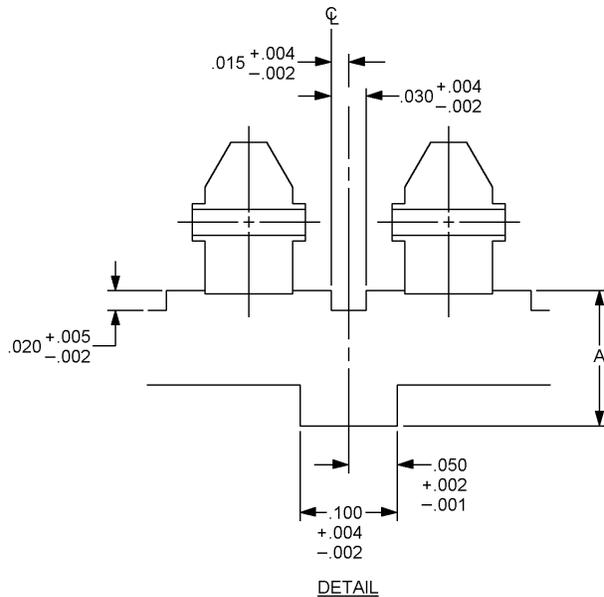


FIGURE 1. Dual row contacts, type CR.

MIL-DTL-21097/4F
w/AMENDMENT 1
DRAFT DATED 2 NOVEMBER 2016



Inches	mm	Inches	mm
.001	.03	.098	2.49
.002	.05	.100	2.54
.004	.10	.116	2.95
.005	.13	.125	3.18
.015	.38	.128	3.25
.020	.51	.140	3.56
.026	.66	.150	3.81
.030	.76	.200	5.08
.040	1.02	.210	5.33
.044	1.12	.325	8.26
.046	1.17	.326	8.28
.050	1.27	.328	8.33
.079	2.01	.350	8.89

Board guide	A dim
	+ .002 (.05)
	- .004 (.10)
.06 (1.52)	.119 (3.02)
.09 (2.29)	.150 (3.81)

POLARIZING CAVITY FOR EVEN NUMBER OF CONTACT POSITIONS

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. Unless otherwise specified, tolerance is $\pm .010$ (.25 mm) for three place decimals.
4. Contacts and terminals shall be designated on the connector using numerals in the locations shown.
5. The shape of the barriers is optional except that barriers shall not protrude beyond the plane of the underside of the mounting flange.
6. Slot shall accept the following thickness printed wiring boards:
 - Size 2 - .054 (1.37 mm) to .071 (1.80 mm)
 - Size 3 - .086 (2.18 mm) to .103 (2.62 mm)
Slot shall prevent entry of printed wiring board having the following thickness:
 - Size 2 - .084 (2.13 mm)
 - Size 3 - .113 (2.87 mm)

FIGURE 1. Dual row contacts, type CR – Continued.

MIL-DTL-21097/4F
w/AMENDMENT 1

DRAFT DATED 2 NOVEMBER 2016

TABLE I. Connector, electrical, composite, receptacle, type CR, mounting provision A.

Dash number	Style	Class	Size	Dimensions (inches) <u>1/</u> <u>2/</u>				
				A (Maximum)	B ±0.015 (0.38)	C ±0.005 (0.13)	D ±0.010 (0.25)	E ±0.010 (0.25)
01	17	a	2	2.570 (65.28)	2.300 (58.42)	1.600 (40.64)	0.531 (13.49)	.123 (3.12)
02		a	3					
03		b	2					
04		b	2					
05		b	2					
06		b	3					
07		b	3					
08		b	3					
09	23	a	2	3.170 (80.52)	2.900 (73.66)	2.200 (55.88)	0.531 (13.49)	.123 (3.12)
10		a	3					
11		b	2					
12		b	2					
13		b	2					
14		b	3					
15		b	3					
16		b	3					

See footnotes at end of table.

MIL-DTL-21097/4F
w/AMENDMENT 1

DRAFT DATED 2 NOVEMBER 2016

TABLE I. Connector, electrical, composite, receptacle, type CR, mounting provision A – Continued.

Dash number	Style	Class	Size	Dimensions (inches) <u>1/</u> <u>2/</u>				
				A (Maximum)	B ±0.015 (0.38)	C ±0.005 (0.13)	D ±0.010 (0.25)	E ±0.010 (0.25)
17	29	a	2	3.770 (95.76)	3.500 (88.90)	2.800 (71.12)	0.531 (13.49)	.123 (3.12)
18		a	3					
19		b	2					
20		b	2					
21		b	2					
22		b	3					
23		b	3					
24		b	3					
25		35	a					
26	a		3					
27	b		2					
28	b		2					
29	b		2					
30	b		3					
31	b		3					
32	b		3					
33	41		a	2	4.970 (126.24)	4.700 (119.38)	4.000 (101.6)	0.531 (13.49)
34		a	3					
35		b	2					
36		b	2					
37		b	2					
38		b	3					
39		b	3					
40		b	3					

1/ Dimensions are in inches.

2/ Metric equivalents are given for information only.

MIL-DTL-21097/4F
w/AMENDMENT 1
DRAFT DATED 2 NOVEMBER 2016

REQUIREMENTS

Dimensions and configuration: See figure 1 and table I.

Polarizing keys: Part or Identifying Number (PIN). M21097/11-03 or M21097/11-04. A key is inserted into the card slot at even contact numbers, 2, 4, 6, etc.

Mating male adapters: Shall be in accordance with MIL-DTL-21097/5.

Finish: Gold plating in accordance with ~~ASTM B488~~ MIL-DTL-45204, type II, ~~code~~ grade C, class 1-27, over nickel plating in accordance with MIL-DTL-38999, Appendix A, class 2, 30 to 150 microinches.

PIN: M21097/4-(dash number from table I).

Qualification: Not required.

First article testing: First article testing shall be as specified in table II, tests shall be in accordance with MIL-DTL-21097.

Sample size: 8 connectors shall be subjected to the first article testing. All sample units shall be subjected to the inspections in group I. The sample units shall be divided equally into 2 groups of four and subjected to the inspection for their particular groups.

TABLE II. First article tests.

Inspection
<u>Group I</u> (8 samples)
Visual and mechanical inspection
Permeability
Insulation resistance
Dielectric withstanding voltage
Contact resistance
<u>Group II</u> (4 samples)
Temperature cycling
Shock
Bond strength, body assembly
Contact retention
Resistance to soldering heat
Resistance to solvents
<u>Group III</u> (4 samples)
Salt spray (corrosion)
Low-signal level contact resistance
Contact resistance
Bond strength, body assembly

Failures: One or more failures shall be cause for refusal to grant first article approval.

MIL-DTL-21097/4F
w/AMENDMENT 1
DRAFT DATED 2 NOVEMBER 2016

Amendment notations. The margins of this specification are marked with vertical lines to indicate where modifications from this amendment were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the previous issue.

Referenced documents. In addition to MIL-DTL-21097, this document references the following:

MIL-DTL-21097/5
MIL-DTL-38999
ASTM B488

CONCLUDING MATERIALS

Custodians:

Army – CR
Navy – EC
Air Force – 85
DLA – CC

Preparing activity:
DLA - CC

(Project 5935-2017-009)

Review activities:

Army – AR, AT, AV, CR4, MI
Navy – AS, MC, OS, SH

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <https://assist.daps-dla.mil>.